Parasitic mites of Surinam XXV : Infestation of mattresses with Pyroglyphidae (Acari : Astigmata) [1]

by

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INTRODUCTION

A mite collecting expedition in late summer 1971 in Surinam by Dr. F. S. Lukoschus and the second author, gave the opportunity to study the degree of infestation with mites of mattresses. Floors of houses were studied previously (Bronswijk 1972). In the light of modern investigations (Bronswijk 1973) mattresses can be even more important than floors for the colonisation of houses with mites.

MATERIALS AND METHODS

On August 26 and 27 1971, 18 dust samples were collected by vacuumcleaner from the mattresses of houses in the Paramaribo area. The type of mattress and the age were recorded.

Two replicas of 0.2 g dust were studied by a flotation method (Bronswijk 1973) and the arithmic mean between the two mite numbers was calculated. The mites were identified under a phase-contrast microscope.

RESULTS

Of the 18 mattresses studied 11 were made of kapok, 5 of polyester foam, 1 of rags and 1 of both kapok and polyester.

Mites were found in the dust of all mattresses. Pyroglyphidae were the most abundant mite family in all samples : 5000 specimens were counted (85% of the total mite count). Next came the predatory family Cheyletidae with 298 specimens (6%). All other mites amounted to 518 specimens (9%).

The most abundant pyroglyphid mite was *Dermatophagoides pteronyssinus* (Trouessart 1897) with 4896 mites (84% of the total mite number). *Dermatophagoides neotropicalis* Fain & Bronswijk 1973 was found 78 times (1.6% of total mite count, and *Malayoglyphus intermedius* Fain, Cunnington & Spieksma 1969, 26 times (0.5% of total mite count).

Blomia and *Suidasia,* which were quite abundant in floor dust (Bronswijk 1972), were scarcely found in the mattress samples. The undescribed species of *Dermatophagoides,* which was found on the floors in 1969, could not be found in the mattresses in 1971. On the other hand *D. neotropicalis* was not found on the floors.

In Fig. 1 the relation between the age of the mattress and the number of the most abundant mite (*D. pteronyssinus*) is shown, concerning the polyester foam and kapok mattresses. The scatter diagram shows the well-known fact that polyester foam mattresses are a fairly recent addition to the house. They do not show a lower degree of mite infestation when compared to kapok mattresses in the same age class. In the kapok mattresses numbers of *D. pteronyssinus* rise the first 10 years of use.

The one mattress made of rags was 20 years old and possessed 324 *D. pteronyssinus* in 0.2 g of dust. The mattress consisting of both kapok and polyester foam was apr. 25 years old and yielded 116 *D. pteronyssinus* in 0.2 g of dust.

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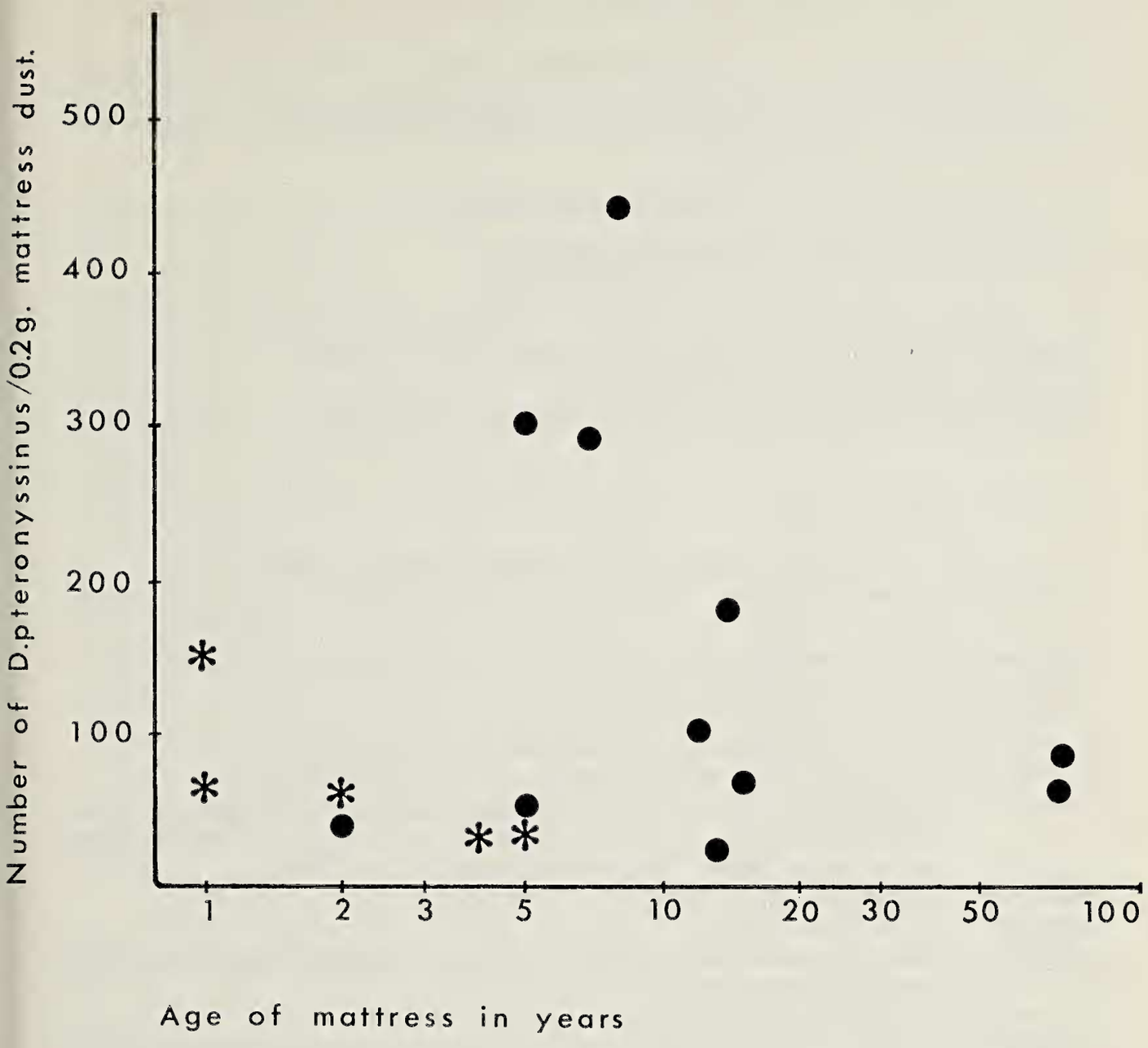

Fig. 1. Scatter diagram showing the relation between age of the mattresses and numbers of the mite *Dermatophagoides pteronyssinus*. Dots indicate kapok mattresses, stars those of polyester foam.

D. neotropicalis was found in two polyester mattresses, *M. intermedius* in two kapok ones and in the mattress consisting of both kapok and polyester foam.

DISCUSSION

There seems to be a great variation in the mite numbers of the mattresses within the same age class. Different types of houses (with subsequently different microclimates) could be the cause of parts of this variation. Another important factor wil have been the different intensities of bed hygiene, especially as far as dead mites were counted (Hughes & Maunsell 1973).

The flotation method counts all mites whether dead or alive. The rate of breaking down of the exosceletons of the arthropods is not known. Therefore it is not impossible that the maximum size of the population of *D. pteronyssinus* in the mattresses is attained a few years earlier than shown in Fig. 1.

It looks as if there is still much to be done on the ecology of our own mattresses.

SUMMARY

Mattress samples from the Paramaribo-area (Surinam) showed *Dermatophagoides pteronyssinus* to be the most abundant mite. The concentration of this mite in the dust depends partly on the age of the mattress. In kapok mattresses highest numbers were found after 5—15 years of use.

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